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Active Aeroelastic Wing completes parameter ID flights

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WRIGHT-PATTERSON AIR FORCE BASE, Ohio — A team of engineers from the Air Force Research Laboratory's Air Vehicles Directorate, Structures Division, working closely with counterparts at NASA and Boeing, successfully completed the first phase of flight research in the Active Aeroelastic Wing Flight Research Program.

The goal of this testing phase was to identify and develop standard parameters on aeroelastic characteristics of the wing. This was done by comparing initial structural data readings with readings taken during and after 28 hours of flight tests. The test aircraft is a modified F/A-18 with the flexible wing structures installed, along with 1,600 sensors to monitor control surface positions, wing deformation, structural strain and acceleration.

Active aeroelastic wing technology was originally developed as a solution to the control surface problems with high speed fighter aircraft, enabling better maneuverability at higher speeds and also making the wings lighter in weight. The research team is now using the data to develop new control laws that will exploit the wing aeroelasticity in the second phase of the program. @